

User's Guide



VersaTools™ MSW 4V SDI
Mini Serial Digital Interface Switcher

Introduction

The Extron MSW 4V SDI is a four-input, two-parallel-output, mini SDI (serial digital interface) switcher (MSW). The MSW is a member of the Extron VersaTools™ line of basic distribution amplifiers, switchers, and associated video accessories.

The MSW switches among up to four SMPTE-259M serial video SDI inputs on female BNC connectors and outputs two identical equalized and re-clocked SDI outputs on female BNC connectors. The MSW 4V SDI automatically recognizes 4f_{sc} PAL, 4f_{sc} NTSC, component 4:2:2, and Widescreen 4:2:2 standards.

The switcher can be operated from the front panel or via a contact closure device connected to the rear panel such as an Extron KP 6 Keypad Remote Control or an IR 102 infrared remote control kit. The MSW also features a front panel selectable autoswitching mode that automatically switches to the highest numbered input with active SDI signals.

The MSW ships with an external 12VDC power supply.

Installation

The 1U high, quarter rack width, MSW 4V SDI can be mounted on a rack shelf, mounted under a desk or tabletop, or mounted on a projector bracket.

Rack mounting

For optional rack mounting, mount the MSW on a VersaTools 19" 1U Rack Shelf (Extron part #60-190-20) (figure 1) or a standard Universal 1U Rack Shelf (Extron part #60-190-01) (figure 2). On the standard rack shelf, the MSW mounts in one of four locations to the rear of the rack or in one of four locations to the front of the rack.

1. If feet were previously installed on the bottom of the MSW, remove them.
2. Mount the MSW on the rack shelf, using two 4-40 x 3/16 screws in opposite (diagonal) corners to secure the MSW to the shelf.
3. Install blank panel(s) or other unit(s) to the rack shelf.

NOTE Only products in the VersaTools line can be mounted to a VersaTools shelf. Most 1U rack-mountable Extron products can be mounted on the standard shelf.

Furniture or projector mounting

Furniture mount or projector mount the MSW using the optional mounting kit (Part #70-212-01, furniture, or 70-217-01, projector) as follows:

1. Attach the mounting brackets to the MSW with the machine screws provided (figure 3).

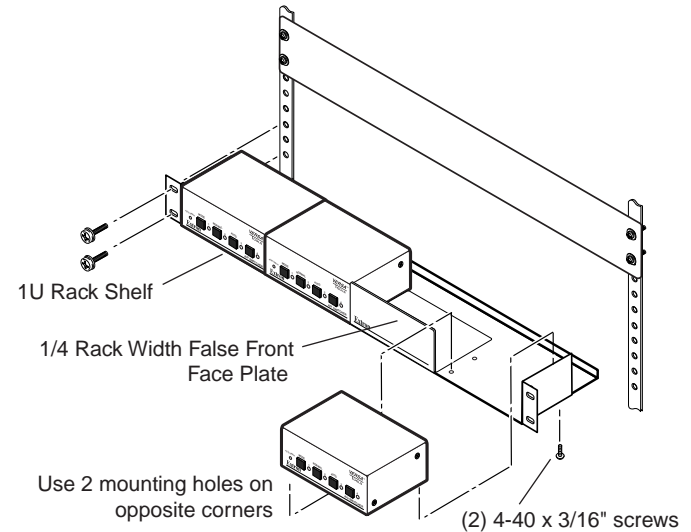


Figure 1 — Mounting the MSW on a VersaTools rack shelf

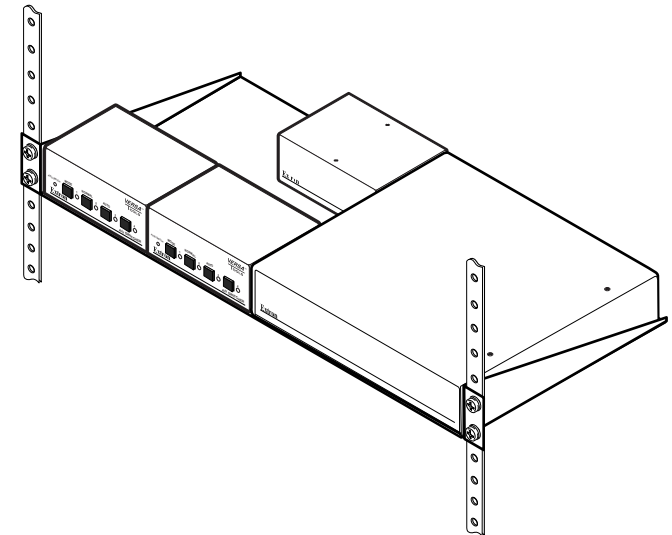


Figure 2 — MSW mounted on a standard rack shelf

2. If feet were previously installed on the bottom of the MSW, remove them.
3. **For furniture mounting**, hold the MSW with the attached brackets against the underside of the table or other furniture. Mark the location of the screw holes of the bracket on the mounting surface.

Installation

4. **For furniture mounting**, drill 3/32" (2 mm) diameter pilot holes, 1/4" (6.3 mm) deep in the mounting surface at the marked screw locations.
5. **For furniture mounting**, insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until just less than 1/4" of the screw protrudes.
6. **For furniture mounting**, align the mounting screws with the slots in the brackets and place the MSW against the surface, with the screws through the bracket slots.
7. **For furniture mounting**, slide the switcher slightly forward or back, then tighten all four screws to secure the MSW in place.

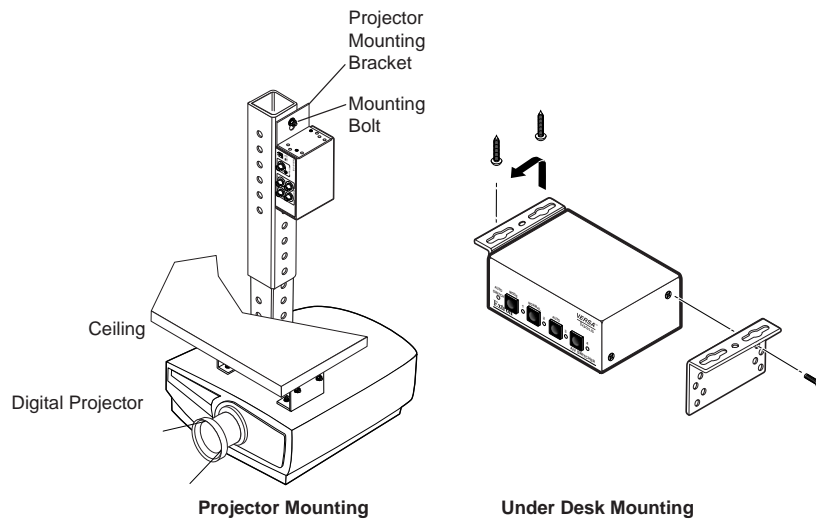


Figure 3 — Desk and projector mounting the MSW

8. **For projector mounting**, secure the MSW to a projector mount by inserting the mounting bolt through the bracket's slotted hole.

Rear Panel Connections

- ① **SDI Inputs (1 through 4) connectors** — Connect SDI video inputs to these BNC connectors.
- ② **SDI Outputs (A and B) connectors** — Connect one or two SDI devices to these BNC connectors. The MSW outputs re-clocked SDI outputs.
- ③ **Contact connector** — Connect a remote contact closure device to the switcher for remote control of the switcher, or daisy chain the switcher to other MSWs for remote control of the other switchers, via this 5-pin captive screw connector

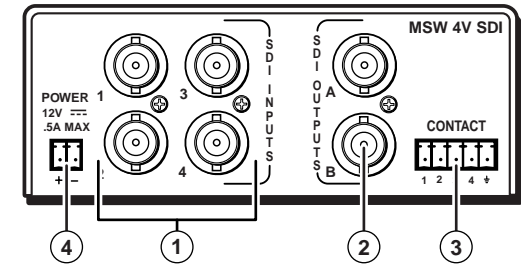
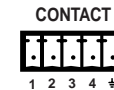


Figure 4 — MSW 4V SDI rear panel

NOTE The switcher must be in normal (manual) mode for contact closure to work.

To select an input using a contact closure device, momentarily short the pin for the desired input number to logic ground (pin 5). To force one of the inputs to be always selected, leave the short in place. The short overrides any front panel input selections.



You can also daisy chain multiple MSWs via the Contact connector for front panel control of all switchers; touch the input button on one MSW to switch all MSWs. Wire pin 1 to pin 1, pin 2 to pin 2, and so on.

CAUTION Power supply voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the MSW. Identify the power cord negative lead by the ridges on the side of the cord.

- ④ **Power connector** — Plug the external 12V power supply into this 2-pole captive screw connector. The power supply is included with the unit. Figure 5 shows how to wire the connector.

NOTE Do not tin the stripped power supply leads before installing the captive screw connector. Tinned wires are not as secure in the captive screw connectors and could be pulled out.

WARNING The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.

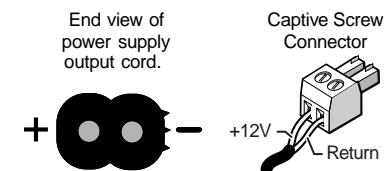


Figure 5 — Power connector wiring

Connections

To verify the polarity before connection, check the no load power supply output with a voltmeter.

Alternatively, an Extron P/S 100 Universal 12VDC Power Supply can power up to ten MSWs or other Extron 12V DC devices using only one AC power connector.

Front Panel Controls and Indicators

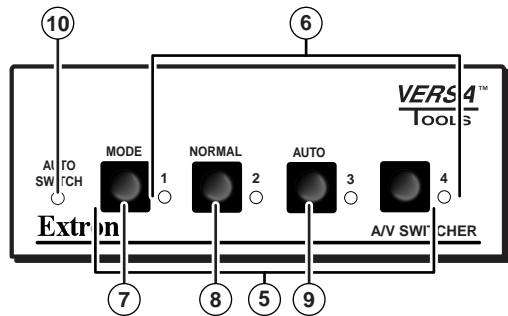


Figure 6 — MSW 4V SDI front panel

Input selection

- ⑤ **Input 1 through 4 buttons** — Each Input button selects the associated input for output.
- The Input 1, Input 2, and Input 3 buttons are also used to toggle auto-switch mode on and off. See *Autoswitch mode controls and indicators* and items ⑦, ⑧, and ⑨.
- ⑥ **Input 1 through 4 LEDs** — The Input LEDs identify the selected input.

Autoswitch mode controls and indicators

- ⑦ **Mode button** — The Mode button is used with the Normal button or the Auto button to select the switching mode. Mode is a secondary function of the Input 1 button.
- ⑧ **Normal button** — The Norm button is used with the Mode button to select normal mode. Normal is a secondary function of the Input 2 button.
- ⑨ **Auto(switch) button** — The Auto button is used with the Mode button to select autoswitching mode. Auto is a secondary function of the Input 3 button.
- ⑩ **Auto Switch LED** — When lit, the Auto Switch LED indicates that the switcher is in autoswitch mode. The MSW automatically

switches to the highest numbered input with active SDI signals. When unlit, the switch is in normal (manual switch) mode.

Mode selection

Turn autoswitch mode on or off as follows:

1. Press and **hold** the Mode (Input 1) button.
- 2a. **To select autoswitch mode** — Press and release the Auto (Input 3) button. The Auto Switch Mode Active LED lights.
- 2b. **To select normal mode** — Press and release the Normal (Input 2) button. The Auto Switch Mode Active LED goes off.
3. Release the Mode button.

Specifications

Video

Resolution	8 or 10 bits, automatic
Operations standards	143 Mb/s (4f _{sc} NTSC) 177 Mb/s (4f _{sc} PAL) 270 Mb/s (4:2:2) component video 360 Mb/s (4:2:2) widescreen, autoselect
Equalization and re-clocking	Automatic for up to -30dB of cable loss

Video input

Number/signal type	4 digital component video
Connectors	4 female BNC
Minimum/maximum levels	0.4V to 2.0V p-p with no offset
Impedance	75 ohms
Return loss	-40dB, DC @ 10 MHz
Maximum DC offset	5.0V

Video output

Number/signal type	2 re-clocked SMPTE-259 serial digital component video
Connectors	2 BNC female
Impedance	75 ohms
Return loss	<-30dB @ 5 MHz
DC offset	±5mV maximum with input at 0 offset

Sync

Standards	SMPTE-259
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Control/remote — switcher

Contact closure	1 3.5 mm 5-pole captive screw connector
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Contact closure pin configurations See switcher's label.

General

Power	100VAC to 240VAC, 50/60 Hz, 6 watts, external, autoswitchable; to 12VDC power supply.
Temperature/humidity	Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, non-condensing Operating +32° to +122°F (0° to +50°C) / 10% to 90%, non-condensing
Rack mount	Yes, with optional 1U rack shelf #60-190-01 or 60-190-20; also under-furniture mountable with optional brackets #70-212-01, or projector mountable with optional brackets #70-217-01
Enclosure type	Metal
Enclosure dimensions	1.7" H x 4.3" W x 3.0" D (1U high, quarter rack width) 4.3 cm H x 10.9 cm W x 6.5 cm D (Depth excludes connectors.)
Product weight	0.6 lbs (0.3 kg)
Shipping weight	3 lbs (1.4 kg)
Vibration	ISTA/NSTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE Specifications are subject to change without notice.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.



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